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Credentialism in Korean Society and Post-NCS

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1. Introduction

In this study, we theoretically and empirically examined credentialism that was regarded as the direct cause of developing NCS(National Competency Standards) at the point of completing NCS developing, and sought the future development of NCS on such a basis.

For theoretical and empirical understanding of educational background problems, credentialism was used as a central tool for conceptual understanding. We defined credentialism as a continuously expanding social structure in which higher education exists as a means of competition and exclusion for acquisition of positional goods, and is used as a tool of signaling, selecting or excluding. In the social structure of economic development and socially scarcity, we described that, as a means of positional goods acquisition, the individual behavior is selected and based on this, that credential has been pursued and marketized, and the unintended social structure of credentialism has been formed.

Based on the previous research, we theoretically summarized credentialism, and presented its aspect based on the statistical data and the results of previous research. We examined the private expenditure proportion of higher education and the mismatch between skill and education in each country. And, of Korea, the supply of college graduates, wage gap by educational background and by firm size, and private education expenditure were examined. Through previous research, we examined the job structures of the companies and the utilization of credentialism and academic elitism in personnel management. We summarized the changes and the results of vocational education and of vocational training indicated by the introduction and utilization of NCS using the literature data, and examined the utilization of NCS in the personnel management by interview and FGI(focus group interview). Based on expert opinions and research results of each chapter, we summarized the conclusion of overcoming credentialism and the future development of NCS.

2. The Concept and Theoretical Review of Credentialism and NCS

2.1. Credentialism and Meritocracy

Meritocracy was a social alternative to attributionism associated with the identity system. Attributionism is a specialism based on specificity, whereas meritocracy is universalism on the basis of universal achievement. Social mobility in attributionism are sponsored mobility that are selected and educated when young, whereas in meritocracy are contest mobility that can rise to social elites according to individual ability and accomplishment. In meritocracy society, individual can be more educated just with capability, and status can be elevated through education. Therefore, meritocracy has a close relation with the change of education system.

About the role of education from the viewpoint of meritocracy, the achievement model(status acquisition model) considers schooling as the main channel of socioeconomic achievement, whereas the class model considers that the education is defined by belonging social class or ascribed individual characteristics and plays a role of reproducing class and identity. In modern society, educational background was accepted as an important indicator of social composition and justified to establish credentialism society.

Thus, credentialism and meritocracy were the supporting basis and justifying factors for each other. However, appearing the issue of overeducation or the inconsistency in educational background and ability, skepticism arises on legitimacy of credentialism and meritocracy.

Theoretically, in human capital theory, education is directly connected to a high level of human capital and resulted in productivity. On the other hand, signal and selection theory suggests that education does not directly improve productivity but merely reveals potential productivity. In job competition theory, the job rank matches the applicant's because the job is ranked according to technology and training demand, and the applicants is ranked by observable characteristics(mostly education). Although there are differences among above theories, they are generally in a positive position related to the correlation of educational background and ability. However, the social closure theory, which grasps education as a means of positional goods acquisition, judges education level is used to competing for and excluding from status acquisition, and the issue of overeducation is inevitable. Thus, social closure theory deems that educational background and ability are discordant.

Social closure or exclusion is limiting of opportunities for potential competitors by a particular social group using favorable criteria to them. The concept of social closure is based on Weber's theory, and it is Collins who applies this to education. Collins identified

the educational credential as a means of control for a rare position in the labor market. He argues that schooling is not a process of improving ability, but acquiring qualification. Bourdieu identified the education system as a mechanism for producing qualifications in line with the needs of the labor market. The educational system is a mechanism for converting social groups or class differences into personal differences and approving the according hierarchy. Now, the apparent relationship between degree and vocational ability is firmly established by faith.

2.2. Ability-Based Society and NCS

The problem, that schooling is only a means or a device to prevent the openness of society or to develop knowledge for the related status group, means the collapse of the ideology of “educational background= educational ability=ability”. In credentialism, as a diploma being recognized as a means to sustain the socioeconomic superiority among generations and classes, overeducation or educational inflation occurs.

Even if educational background is in agreement with ability, the problem still remains. Because meritocracy is an ideology of distribution according to individual ability and justifies the serious social inequalities and exclusions that arise according to ability. The ability is composed of talents(innate traits) and endeavors(acquired traits), and the belief that success through education is possible and meritocracy as a discipline system function to preserve the existing social system. However, in the real world, inequality of income and wealth may lead to inequality of educational opportunities, and inequality of education may lead to inequality of ability. But the inequality of natural talents and backgrounds cannot be morally justified. On this, several theories such as the Rawls’ differential principle have been raised. Rawls criticizes the notion of congruity as a contribution in meritocracy, because it is influenced by the early family-social environment although effort is also natural feature.

Overeducation and exam competition appearing as a status competition in credentialism, by converting schooling into admission- based education, have an adverse effect on the education itself, impair the spirit of cooperation, and paralyze morality for youth. In these circumstances, it was NCS to be developed to create conditions for building an ability-based society. NCS, which was originally gradually being developed to solve the disparity in work, education training, and qualifications, was extensively carried out under the previous government. The reason was that credentialism was not only divergent from meritocracy but also caused considerable harm with the pursuit of excessive specs.

Unlike credentialism pursuing of general ability, NCS extracted the skills required for each job and standardized them at the national level. In the case of foreign countries, the

government has set standards for job competency with the goal of effective training, however in Korea, it is unique because standardization of job competency is done in order to overcome credentialism.

With the introduction of NCS, it was expected that individuals are able to realize what capabilities they need in their desiring job field and that companies are able to hire the right people for right place. Because NCS development has been extensively done in a short time, however, the first NCS development has been completed without reviewing problems: necessity to develop NCS for all subclasses, the validity of developed NCS, credentialism as a purpose of NCS development.

3. The Realities of Credentialism in Korean Society

3.1. Marketization and Mismatch of Higher Education

The expansion of higher education has happened under favorable conditions which an increase in demand for managerial and professional jobs. However, credentialism of expansion of higher education is usually evaluated as negative. The publicity(the promotion of democratic equality and social efficiency) that schooling has to pursue has been overwhelmed by the private function which is individual social mobility, and the wasteful race of the credential acquisition has continued as the schooling has been consumed itself for private purpose.

In order to reveal the negative effects of the credentialism, it was empirically analyzed from previous research that the education was demanded more than the need in the observed job; it was mentioned that the selecting function of the education contributed only to the personal interests of individuals and corporations than social profit, and that inflation is excessive in higher education. Furthermore, the expansion of education has been caused by the compensation for relative position in educational achievement, and the proportion of private spending in higher education has increased. In general, that proportion was high in English-American market economy system, and Korea was the top accounting for 80%. The expansion of education was shown mainly in a mismatch between education and industry in the free market economy, and in Korea, the proportion of overeducation is the highest with reaching 70%. Also, in the ratio of mismatch between job and major was the highest at 50%.

In Korea, the number of students enrolled in four-year colleges is steadily increasing, accounting for 60% of high school graduates. Also, the number of new graduate students has surged during the 1997 foreign-exchange crisis and the 2008 global financial crisis. As of 2013, the biggest oversupply is the master and doctor workforce, which is about

880,000 people. Although education expansion occurred, however, there was no device to manage the quality of education, and the curriculum became poor. Among the accomplishments of education, as credentialism changing into that only the superiority of relative cognitive ability is important, the precedent learning and the private tutoring for this have been promoted and the private education market has been developed. Since private education costs have begun to be observed, private education expenses for entering college have steadily increased. In addition, as higher education expanding, the hierarchical structure of college became more solidified, and the problems of academic clique became intensified.

3.2. Labor Market Structure and Personnel Management

Credentialism comes from the structure of the labor market which is differentiated by educational background. The four-year college entrance rate has continued to increase, but the labor market performance of the four-year college graduates has been steadily maintained. The return on education investment of college graduates or higher has dropped until the early 1990s, rebounded around 1995, and reaching 10% after 2008.

Labor market performance of college graduates is explained by the demand side of the labor market: such as the development of high-tech industries, an increase in demand for higher education in industry, and an increase in relative labor demand for higher education. However, the wage gap by education level is also attributed from the fault structure of the labor market. Wage gap by firm size, wage gap between regular and irregular workers, etc., caused fragmentation of dual labor market of the high-educated with high-wage and the low-educated with low-wage.

The presence of the internal labor market is also a causing factor for credentialism and academic elitism. That is to say, it is competing using educational background and academic clique for entering the internal labor market which is less than a half of proportion that of the United States. Also, theoretically, the internal labor market is a mechanism to foster credentialism or academic elitism through the presence of entry point by signaling and selecting, and the promotion like thinning out. It is characteristics of Korean labor market that the wage effect and promotion effect of educational background and academic clique are clear, and that the educational background and academic clique influence the entry of the internal labor market and job positioning.

HR(Human resources) managers recognize that educational background and academic clique are key indicators presenting the applicant's potential abilities. In fact, companies were using their educational background and academic clique as the main criteria for personnel management such as recruitment, and were implementing limitation on

educational background for hiring requirement or giving additional points for high-educated persons from prestigious college. When making a decision on promotion, in large corporations were more putting emphasis on academic clique, and in professional and technical jobs also did so. In addition, there were cases that a network of prestigious college is affecting the promotion of alumni. In recent years, however, the importance of academic clique in promotion has declined.

3.3. The Meaning Change of Credentialism in Korean Society

Stiglitz has theorized that the signaling of educational background has a positive impact on society by improving the matching between the employer and the employee, and recently, this theory has been proved as experience data. Baker positively assessed credentialism as institutionalization of education was extended to access to occupational opportunities, which resulted in significant social outcomes with the advancement of equal educational opportunities.

Other scholars say that higher education has responded to nurturing the manpower needed for the industry. In the cases of firms with bureaucratic systems such as large corporations, industries with rapid technological changes, and companies requiring employee control, credentialism toward recruiting highly educated employees played a role in reducing uncertainty. In addition, jobs guaranteed a long-term employment and training due to technological change were mainly provided from companies with an internal labor market, and in this case, higher education credentials were required as indicators of the possibility of training.

In the Korean economy dominated by conglomerates, the credential functioned as an inexpensive selecting device for companies and an inexpensive signal device for students. Higher education was expanded by the functions of these credentials, and in Korea, the expansion of higher education was unprecedented. This expansion of higher education has made defensive spending indispensable for not to remain as a high school graduate. However, compared with the expansion of higher education, jobs for college graduate have increased or stagnated slightly. In such a state, the relative education training and their grades(scores) become more important, and the changes for credentialism to be unyielding appear. So the competition to show the relative educational outcome was further intensified, and this aspect was expressed as so-called “harsh selection”.

In Korean society, credentialism has exerted so much harmful influence on education itself. As an education became subordinate to college entrance examination, learning achievement remained at a low level, and negative influences aroused such as lack of positive self-awareness, isolation between learning and life, and uncritical attitude of

acceptance. Overcoming credentialism begins with a reflection on what learning is, and it is very suggestive in educational reform at the present moment of the so-called fourth industrial revolution development.

4. Introduction of NCS and Changes of Korean society

4.1. Changes in Education and Vocational Training

The Ministry of Education announced “NCS-based High School Vocational Education Curriculum” aimed at specialized high school in September 2015, NCS-based curriculum(practical course) has been applied from 2016, and 196 NCS-based practical courses has been organized and operated in 547 out of 594 specialized high schools and meister high schools.

In the cases of junior colleges, the Ministry of Education conducts NCS-based curriculum in conjunction with the ‘Specialized Junior College Fostering Project’ and has designated and operated the ‘NCS Base Center’ to support this. The number of junior colleges participating in the program has increased from 78 in 2014 to 83 in 2016.

In the cases of 4-year universities, the Ministry of Education provides incentives for establishing NCS-based curriculum in ‘University for Creative Korea(CK)’, ‘Program for Industrial needs- Matched Education(PRIME)’, and ‘Advancement of College Education (ACE)’, etc. In addition, the Ministry of Education has reorganized the curriculum in ‘Lifelong-Learning Based University’ project in conjunction with NCS so that adult learners can strengthen their job skills in their fields. As a result, in 2017, 28 universities and 164 departments, including 23 IPP(Industry Professional Practice) universities, established NCS-based curriculum, which can be found at Korea Polytechnic University, Kyungnam University, and Changwon National University, etc.

The Ministry of Employment and Labor completed the development of training standards in connection with NCS development from 2013 to 2015. Based on this, from 2015, 156 NCS-based curriculums have been introduced to improvement curriculum of Polytechnics. From 2016, the NCS-based education and training courses were expanded to government-supported training (1,324 institutions, 6,279 courses).

The most principal case which NCS-based curriculum applied at education training is the ‘Korean Apprenticeship’. The ‘Korean Apprenticeship’ begins with 51 pilot companies in 2013, 8,679 companies participated in 2016 and 35,324 learning workers took part in the training. As the Work-Study Program has expanded and become possible for enrolled student to participate, at present, 2,600 students participated in Industry-Academy Combined Apprenticeship School, 480 students took part in ‘High School - Junior College

Integrated Education(Uni-Tech)', and 23 universities joined 'IPP (Industry Professional Practice)' for 4-year university.

The budget for the dissemination of NCS-based curriculum led by the Ministry of Education and the Ministry of Employment and Labor is 3.67 trillion KRW from 2013 to 2016, which is a little more than the sum of total amount of support for unemployment person training and for 'entrepreneur training' in the same time. This directly demonstrates how much effort has been concentrated to develop and use NCS.

The reorganization of NCS-based qualification system is being led by the Ministry of Employment and Labor, Human Resources Development Service of Korea and the Industry Skills Council(ISC). Currently, a work is underway to convert the existing 'certified national technical qualifications' into 'NCS-based course evaluation qualifications' which is obtained through education training and evaluation. Each in 2015 and 2016, 15 national technical qualifications were converted into NCS-based course evaluation qualifications, and 31 qualifications will be converted into NCS-based course evaluation qualifications by 2017. In addition, the development of 'NCS-based qualification', which is designed based on NCS, was completed in 597 items in 24 fields. Currently, a comparative connection between NCS-based qualifications and the items of national technical qualifications is progressing.

The NCS-based course evaluation qualifications was effective in improving employment, job performance, reducing on-site adaptation time, reducing retraining costs of the company, and reducing mismatch of skills. The development of 'NCS-based qualification' as an industry-led development was completed at 597 items in 24 fields.

However, there are limits that only the acquisition of technology not having a theoretical background is being carried out in already utilized NCS or that learning the practical capability through NCS does not replace educational background and academic clique, that the content of job standards may vary depending on the subjects participating in NCS development, and specific technologies needed only for specific companies may be developed as NCS.

4.2. The Changes in Personnel Management of Corporations

The use of NCS in corporations is divided into recruitment and refresher and extension training course. In the case of recruitment, it was announced in 2015 that the full application of NCS-based capability-based recruitment in public sector, and will be applied to all public institutions by 2017. In order to support the use of NCS in private sector recruitment, consulting projects have been conducted for midsize-strong companies and SMEs(small and medium enterprises).

In order to see how the use of NCS reduced the discrimination of credentialism, we interviewed HR managers of large corporations and conducted FGI for HR managers of SMEs.

Most of companies attending FGI were using NCS for recruiting and for refresher and extension course and only a handful of companies were using NCS for positioning, promotion, and wage. Companies have been consulted for the introduction of NCS and trained at Human Resources Development Service of Korea.

The difficulties of using NCS were proposed: the contents are difficult to apply to field; it takes a lot of time to develop appropriate teaching materials and tools for the field; there are restrictions on the use of NCS due to the specificity of the job; knowledge and technology continue to change or there is a case where the job is not registered at NCS; it is actually difficult to conduct and evaluate the interview according to the NCS; it becomes burdensome because the time required for recruitment increases; etc.

However, following positive points were suggested: the turnover rate has been reduced due to NCS-based recruitment; the period of adaptation to the assigned job has become shorter; it has become possible to select suitable talents for the job; and selection process has become transparent. For companies adjusting wages based on NCS, the perception of fairness in evaluation has improved and the acceptability of wages has increased. It is shown that Job-related training by NCS, support for acquiring qualifications, and rotation positioning improved the worker's competence and increased their satisfaction.

When hiring new employees, actually in companies, FGI participants have emphasized job aptitudes, attitudes, and personality rather than academic clique or educational background, except for researchers and technical workers. Most of their thoughts were similar that there are difference between competence for working and capability for studying. In recent years, HR managers have said that the importance of educational background, academic clique, and specs has been greatly reduced in recruitment, but it is still "a little bit important." Although the introduction and use of NCS contribute to weakening credentialism and academic elitism, their opinions about the level of contribution have been divided.

HR manager A, from the large company, analyzed the data of the applicant, but said that there was no significant correlation between the university and the work performance. Also, it was said that work performance of so-called first-class university graduate is widely distributed. However, he noted that grades(scores) of university are related to work performance.

The large company B has reduced specs in recruitment, but the academic background and grades(scores) have still been evaluation factors. It means that important things in recruiting are different by jobs, and that there are fields like R&D demanding knowledge

of job to join the firms and that fields where knowledge of job is not important.

The large company C, because of many changes in recruiting system, was recruiting new employee by various channels, and all interviews were blind interviews. Although the company did not add or rank based on applicants' final educational background, academic background, and grades(scores), there has been a minimum level from the past and recently it is trend in removing. With experience of HR manager, except for R&D fields, it was found that there was no correlation between academic background and performance.

4.3. Performances and Limits in Introduction of NCS

It is difficult to see the changes by introduction of NCS because it has been less than a year since both NCS and NCS learning modules have been developed. However, there have been noticeable changes in the areas influenced by the governmental authority, such as Specialized High School and Work-Study Program. But the use of NCS in corporate HR management is not very common. While NCS is used in the refresher and extension course and recruitment, voluntary uses were few.

Despite the relatively short period, the outcomes are presented ambilaterally in the fields where the results of the introduction of NCS-based curriculum can be seen. The Ministry of Employment and Labor emphasizes that the introduction of NCS in the field of training improved the employment rate of job seekers and achieved the average benefit of 16.3 million KRW per learning worker in Work-Study Program. However, the dropout rate of learning worker from Work-Study Program is high at around 20%, and the rate is getting high also in unemployed workers training that NCS is applied.

Many missing points are pointed out surrounding NCS. Although NCS-based course evaluation qualifications have been introduced, conflicts with the existing qualification systems continue without the KQF being established. And some NCS are theory-centered, and some are biased toward technology and function acquisition. In addition, there is a big gap among organizations and experts participating in NCS development, and NCS learning modules are meaningless if knowledge and functional skills can be learned only in actual work.

Previously, the difficulty of utilizing NCS, especially applying in the field, has been presented, but positive results are also emerging with regard to the introduction of NCS. An official of WorldSkills International(The International Vocational Training Olympics) emphasized that standardization due to NCS development would greatly contribute to the basic education process up to the high school level, and that the standard model of NCS could train the broader manpower. In corporate with NCS-based personnel management, it is positive results of using NCS that changing jobs are reduced; suitable talents are

selected for jobs; selection processes become transparent; fairness and wage acceptance have increased because of NCS-based wage adjusting; competence of workers are strengthened by NCS-based training.

Also NCS has been developed at the master's level of 4-years or more: psychological counseling and aircraft design. The field of psychology counseling is best suited to the purpose of NCS development because there is little technological change and standardization of education and training process are absolute. Psychological counselors are hoping that the Psychological Counseling NCS and Learning Module will evolve into course evaluation qualifications and be applied to universities(graduate school) curriculum. In the field of aircraft design, NCS was developed and promoted for industrial development. In order to increase the design ability of engineers in the aircraft design which is high value-added industry, NCS was developed centrically by Korea Aerospace Professional Engineers' Association. Developed NCS is expected to be applied to job training for engineers of SMEs and curriculum of aeronautics department in universities(graduate school).

The psychology counseling and aircraft design are highly specialized fields, but field-oriented NCS is emphasized rather than theoretical knowledge based educational background. These examples suggest that NCS is needed to be developed in really necessary areas, not in all areas, and that it is important to select the areas well.

5. Discussion and Conclusion

5.1. Discussion: Reform of Credentialism

The credentialism of Korean society, examined in this study, can be understood more clearly by comparing that education and labor market have what differences in the free market economy and the coordinated market economy. While the free market economy emphasizes relative high levels of general ability, the coordinated market economy does the minimum level of professional ability.

Although the connection between education and work is relatively loose in the free market economy, education(performance) and labor market performance are more closely connected so that the wage gap is large. On the other hand, in the coordinated market economy, education and work are directly connected under a strong vocational training system, and the wage gap is small due to wage compensation according to knowledge skill. In the coordinated market economy where vocational labor market is strong, skills are acquired in schools, and in the free market economy where internal labor market is strong, skills are acquired through on-the-job training. To get on-the-job training of internal

labor market, students in the free market economy try to make the signals of their relative ranking in general human capital.

Like a case of the United States, credentialism may function positively in the free market economy. Also credentialism in the Korean society is judged to have contributed for social and economic development to a certain degree until the mid-1990s. The degree credential competition stimulated students' learning motivation and contributed to fostering excellent human resources. Especially, in the case of Korea, the work structure of company demands various tasks to be carried out, and the diversification in business type of corporate made with the economic growth has increased the demand for human resources with high-leveled general ability. Therefore, in position of individual workers who had to be able to perform various work for career development, it was a rational choice to pursue relatively excellent general ability rather than special ability.

After the mid-1990s, however, the number of university graduates has surged and job growth has slowed, Korea's credentialism has changed qualitatively and has begun to have negative impacts on the economy. Over the university graduation, it caused the excessive discharge of the manpower of the master and doctor, and the second round of credentialism was developed which strengthened the authority of academic clique. With decent jobs stagnant, credential acquirers are fighting for obtaining few decent jobs.

However, as the fourth industrial revolution is underway, it is necessary to shed new light on the meaning of credentialism that pursues general abilities. By the fourth industrial revolution, under the situation that jobs change and own work changes rapidly, the talents with high-leveled general cognitive ability such as mathematics and science are required. Therefore, education reform is needed to be done in a direction to nurture a high-leveled general cognitive ability well which was pursued in credentialism. At the same time, the recovery of education itself must be pursued, and it is a difficult task. Theoretical knowledge based education should be taught in university(credentialism), and practice centered education training which is emphasized in field should be complemented each other by NCS-based education.

Reform of credentialism should be done with reform of the labor market. The wage gap by firm size, and between regular and irregular workers should be resolved. Also a decent job creation policy through productivity improvement of SMEs is required. In addition, there is a need to fully examine the job situation and skill needs of the industry from the results of the PIAAC that presently jobs in Korean society does not require skills or are composed of jobs having nothing to learn from working.

Along with labor market reform, it is necessary to reestablish a culture of work. Breaking from a culture that pursues jobs as positional goods, it is necessary to shift to a culture that pursues a career for self-realization. Career choice for pursuing self-realization

is a ‘protean career’ corresponding to the 21st century, and the ultimate success comes from psychological success. The means of such psychological success vary from person to person and are in many ways. To do this, it is necessary to provide career world information, to counsel vocational career in early stages, and to ensure internal stability of free-semester system.

It is very difficult to advance to education aiming at the learning, itself, by completing education reform while overcoming credentialism society. In this regard, Dore(1976) suggests a fundamental way to overcome credentialism and reform education. He suggests that let all students be placed to the lowest position after compulsory education and do their work, and that select those who are promoted to upper levels through an aptitude test and provide the necessary additional training, not that to be educated first, like the present, and to be employed following those educated levels. He argued that these proposals could be applied first to the selection of public officials(or public sectors) and to the manpower management. Dore’s proposal may be revolutionary, but it is worth following his proposal because the job of public officials(or public sectors) are fairly formal, and it can be enough to function as a best practice. Although there are great desire for jobs in public sectors in Korean society and a lot of difficulties such as the resistance of the Establishment are anticipated, it is not impossible to progress if consensus are created through discussion lasting until the conclusion to be made using many review data and researches, and if a social promise is drawn to promote the implementation of the consensus regardless of the change in the regime.

5.2. NCS development plan

The previous government claimed NCS will replace credentialism and form a ability-based society, but it is natural to understand that NCS is complementary to credentialism. Diplomas from university mainly learning knowledge and theory, and practice-centered NCS-based certificates will complementary play a role in terms of knowledge and technology.

If NCS is understood to supplement credentialism, the NCS-related system should be able to do absolute evaluation in the achievement ability of professional skills. In other words, it should be evaluated as pass or fail whether a minimum ability of specific knowledge and functional skill is possessed. So, it is not consistent with the original intent of NCS that currently the curriculum assessment of NCS learning module measures supremacy-centered excellence.

Presently, Korean society is facing the following problems in the early stage of NCS development and application. First, it is not easy to apply NCS uniformly in education

training and personnel management because in each companies it is different that ideal talent, required skill level, the way of work performance, division system of labor, equipment and facilities, and organizational culture. Second, there are work fields having limitations to educate only with NCS. Third, it is originally impossible to diversify or differentiate by applying one level to NCS capability unit and developing performance criteria, and using it in all schools(including training organizations) and companies. Fourth, NCS is based on the contents of work performed in the industry, and fails to fully take into account the number of classes, the curriculum, and the practical conditions of the education and training institutions. Fifth, there is no way yet to apply NCS flexibly and fairly evaluate and qualify the results of finish of NCS-based education. Sixth, ISC itself, lacks the capability and authority to develop and manage NCS.

The ways to overcome the limits of NCS can be seen in foreign cases. In the UK, there is no restriction on the use of NOS already developed, and it does not support the budget for NOS development any more. In New Zealand, standardization targets are chosen and focused, so IT field with rapid change and art field with creativity are excluded from standardization.

To develop NCS and related systems in Korean society, the following tasks are needed. First, it has to be done to draw up social consensus on what to include and how to utilize for NCS and NCS-based qualifications in the long run. Second, it is necessary to be categorized that the sectors needed to continue to invest and support for NCS by government, and that the fields to transfer the authority to the private institutions. Third, analyzing NCS and related basic present conditions is needed. In parallel with them, it is necessary to understand the fields requiring technical skills through the other ways, not NCS. At the same time, following institutional improvement should be done. First, through selection and focus for work fields, consistent improvement is needed. Second, autonomy should be given for education training institutions and companies to apply NCS flexibly as needed. Third, check and complement are needed for the systems that can be indirectly related to the application of NCS. That is, there should be detailed inspection and supplementation about related systems to expand the utilization of NCS.